APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,576	07/11/2003	Alwyn Dos Remedios	10559-846001	3789

20985 7590 12/20/2006		EXAMINER
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ART UNIT	PAPER NUMBER
2137	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/20/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

	Application No.	Applicant(s)
	10/618,576	REMEDIOS ET AL.
Office Action Summary	Examiner	Art Unit	
	Shewaye Gelagay	2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *11 July 2003*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-42* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-42* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *11 July 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-42 have been examined.

Drawings

2.   The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "switch fabric" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next

Office action. The objection to the drawings will not be held in abeyance.

Specification

Content of Specification

(a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of
     the invention should be placed at the top of the first page of the
     specification unless the title is provided in an application data sheet. The
     title of the invention should be brief but technically accurate and
     descriptive, preferably from two to seven words may not contain more
     than 500 characters.

(b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP
     § 201.11.

(c) Statement Regarding Federally Sponsored Research and Development:
     See MPEP § 310.

(d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR
     1.71(g).

(e) Incorporation-By-Reference Of Material Submitted On a Compact Disc:
     The specification is required to include an incorporation-by-reference of
     electronic documents that are to become part of the permanent United
     States Patent and Trademark Office records in the file of a patent
     application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer
     program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)),
     and tables having more than 50 pages of text were permitted as electronic
     documents on compact discs beginning on September 8, 2000.

(f) Background of the Invention: See MPEP § 608.01(c). The specification
     should set forth the Background of the Invention in two parts:

     (1)   Field of the Invention: A statement of the field of art to which the
           invention pertains. This statement may include a paraphrasing of
           the applicable U.S. patent classification definitions of the subject
           matter of the claimed invention. This item may also be titled
           "Technical Field."

(2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."

(g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

(h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

(i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

(j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

    (k)   <u>Abstract of the Disclosure</u>: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).

    (l)   <u>Sequence Listing</u>, See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Claim Objections

3.   Claim 5 is objected to because of the following informalities: "at least on" should be changed to "at least one". Appropriate correction is required.

4.   Claim 10 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 10 depends on itself. Appropriate correction is required.

5.   Claims 24 and 34 are objected to because of the following informalities: "(Sas)" should be changed to "(SAs)". Appropriate correction is required.

Claim Rejections - 35 USC § 112

6.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

7.   Claim 8 recites the limitation "the signature index" in line 2. There is insufficient antecedent basis for this limitation in the claim.

8.   Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 27, recites, "..., for a match, process according to an operation indicated by the entry." However, applicant has not shown what needs to be performed for a match.

9.   Claim 27 recites the limitation "the entry" in 11. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

11.   Claims 1-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Robins et al. (hereinafter Robins) U.S. Patent 6,430,184 in view of Twomey U.S.

Publication 2003/0131228.

As per claims 1, 17 and 27:

Robins teaches a method comprises:

producing a signature of a packet and at least first and second indexes into

corresponding first and second primary table; (col. 2, line 57-col. 3, line 15; col. 7, lines

8-38; col. 19, line 29-col. 20, line 66; col. 21, lines 20-61)

reading contents of a bucket from a first one of the primary tables and a bucket

from a second one of the primary tables to determine whether either of the buckets

have contents that match to the produced signature; (col. 2, line 57-col. 3, line 15; col.

7, lines 8-38; col. 19, line 29-col. 20, line 66; col. 21, lines 20-61) and

for a match, determining if a selector in an entry in a secondary table matches a

selector of the packet; and if a match processing according to an operation indicated by

the entry. (col. 2, line 57-col. 3, line 15; col. 7, lines 8-38; col. 19, line 29-col. 66, line 18;

col. 21, lines 20-61)

Robins does not explicitly disclose a security policy database cache. Twomey in

analogous art, however, discloses a security policy database cache. (page 3,

paragraphs 33-34; page 4, paragraphs 41-44 ; page 5, pargraph 52; page 7,

paragraphs 73-76). It would have been obvious to one ordinary skill in the art at the time

the invention was made to modify the method disclosed by Robins with Twomey in

order to store various security association parameters for use in processing packets.
(page 3, paragraph 33)

As per claims 2:

The combination of Robins and Twomey teaches all the subject matter as
discussed above. In addition, Robins further discloses wherein the at least one primary
table resides in DRAM. (col. 7, lines 8-38; col. 19, line 29-col. 20, line 66; col. 21, lines
20-61)

As per claims 3 and 39-40:

The combination of Robins and Twomey teaches all the subject matter as
discussed above. In addition, Robins further discloses wherein the at least one
secondary table resides in SDRAM. (col. 7, lines 8-38; col. 19, line 29-col. 20, line 18;
col. 66, lines 20-61)

As per claims 4-5 and 41:

The combination of Robins and Twomey teaches all the subject matter as
discussed above. In addition, Robins further discloses wherein at least one primary
table and the at least one secondary table resides in the same memory. (col. 7, lines 8-
38; col. 19, line 29-col. 20, line 66; col. 21, lines 20-61)

As per claim 6:

The combination of Robins and Twomey teaches all the subject matter as
discussed above. In addition, Robins further discloses wherein the at least one primary
table is divided into a plurality of buckets and each bucket is subdivided into bins. (col.
19, line 60-col. 20, line 66)

As per claim 7:

The combination of Robins and Twomey teaches all the subject matter as

discussed above. In addition, Robins further discloses wherein the cache has a one-to-

one correlation between the at least one primary table location and the at least one

secondary table. (col. 7, lines 8-38; col. 19, line 29-col. 20, line 66; col. 21, lines 20-61)

As per claims 8 and 29:

The combination of Robins and Twomey teaches all the subject matter as ·

discussed above. In addition, Twomey further discloses wherein the signature index for

the first primary table is produced using an IP selector and either a hardware hash unit

or a software hashing algorithm. (page 4, paragraph 44)

As per claims 9, 19-20 and 30:

The combination of Robins and Twomey teaches all the subject matter as

discussed above. In addition, Twomey further discloses wherein the IP selector can be

either IPv4 or IPv6 and includes IP destination, IP source, IP protocol, IP source port, IP

destination port. (page 4, paragraphs 41 and 44)

As per claims 10 and 14:

The combination of Robins and Twomey teaches all the subject matter as

discussed above. In addition, Robins further discloses wherein when the at least one

primary table is searched for a matching signature to a packet, and if no matching

signature is found, the at least one secondary table is not accessed. (col. 7, lines 8-38;

col. 19, line 29-col. 20, line 66)

As per claims 11-12, 15-16, 26 and 36:

The combination of Robins and Twomey teaches all the subject matter as discussed above. In addition, Robins further discloses wherein when the at least one primary table is searched for a matching signature to a packet, and a matching signature is found, the at least one secondary table is accessed. (col. 7, lines 8-38; col. 19, line 29-col. 20, line 18)

As per claim 13:

The combination of Robins and Twomey teaches all the subject matter as discussed above. In addition, Robins further discloses wherein the at least one primary table is a first one of a plurality of primary tables and the at least one secondary table is a first one of a plurality of secondary tables. (col. 2, line 57-col. 3, line 15; col. 7, lines 8-38; col. 19, line 29-col. 20, line 66; col. 21, lines 20-61)

As per claims 18 and 28:

The combination of Robins and Twomey teaches all the subject matter as discussed above. In addition, Robins further discloses wherein processing comprises, processing the packet by reading flags for the packet entry to process the packet according to the flags. (col. 18, lines 1-44; col. 19, line 29-col. 20, line 66)

As per claims 21 and 31:

The combination of Robins and Twomey teaches all the subject matter as discussed above. In addition, Robins further discloses wherein the packets are incoming packets. (Abstract)

As per claims 22 and 32:

The combination of Robins and Twomey teaches all the subject matter as discussed above. In addition, Robins further discloses wherein the packets are outgoing packets. (Abstract)

As per claims 23 and 33:

The combination of Robins and Twomey teaches all the subject matter as discussed above. In addition, Robins further discloses wherein an entry is added to the security policy database cache. (col. 7, lines 8-38; col. 19, line 29-col. 20, line 66; col. 21, lines 20-61)

As per claims 24 and 34:

The combination of Robins and Twomey teaches all the subject matter as discussed above. In addition, Twomey further discloses wherein if the signatures are exhausted, the method further comprises: searching a security policy database to locate the proper operation for the packet and to locate the correct security associations (Sas) to apply to the packet; and inserting the located correct SA as a cache entry into a SPD cache. (page 3, paragraphs 33-34; page 4, paragraphs 41-44 ; page 5, pargraph 52; page 7, paragraphs 73-76).

As per claim 25 and 35 :

The combination of Robins and Twomey teaches all the subject matter as discussed above. In addition, Robins further discloses wherein packet processing determines if the signature equals zero, and if zero, the packet processing sets the signature to another, non-zero value. (col. 18, lines 1-44)

As per claim 37:

Robins teaches a network forwarding device comprising: at least one physical interface; (col. 2, line 20-col. 3, line14; col. 5, lines 43-65) a framer; (col. 2, line 20-col. 3, line14; col. 5, lines 43-65) a network processor; (col. 2, line 20-col. 3, line14; col. 5, lines 43-65) a database cache to provide data to the network processor when processing packets, the database including: at least one primary table including signature values that indicate that a packet's SPD information may be in the cache; (col. 2, line 57-col. 3, line 15; col. 7, lines 8-38; col. 19, line 29-col. 20, line 66; col. 21, lines 20-61) and at least one secondary table including cache entries having a selector, flags, SA information and an operation to perform on the corresponding packet for which a cache lookup was made. (col. 2, line 57-col. 3, line 15; col. 7, lines 8-38; col. 18, lines 1-44; col. 19, line 29-col. 20, line 66; col. 21, lines 20-61)

Robins does not explicitly disclose a security policy database cache; and a switch fabric. Twomey in analogous art, however, discloses a security policy database cache; (page 3, paragraphs 33-34; page 4, paragraphs 41-44 ; page 5, pargraph 52; page 7, paragraphs 73-76) and a switch fabric. (figure 1, item 14) It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the method disclosed by Robins with Twomey in order to store various security association parameters for use in processing packets. (page 3, paragraph 33)

As per claim 38:

The combination of Robins and Twomey teaches all the subject matter as discussed above. In addition, Robins further discloses wherein the interface is a media access controller device. (col. 2, lines 20-39)

12.   Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Robins

et al. (hereinafter Robins) U.S. Patent 6,430,184 in view of Twomey U.S. Publication

2003/0131228 and further in view of England et al. (hereinafter England) U.S. Patent

7,020,772.

The combination of Robins and Twomey teaches all the subject matter as

discussed above. Both references do not explicitly disclose a scratchpad memory to

store the at least one primary table. England in analogous art, however, discloses a

scratchpad memory to store the at least one primary table. (col. 7, lines 46-67) It would

have been obvious to one ordinary skill in the art at the time the invention was made to

modify the system disclosed by Robins and Twomey with England in order to provide a

special memory that holds small items of data for rapid retrieval.

Conclusion

13.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. See Form PTO-892.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Shewaye Gelagay whose telephone number is 571-272-

4219. The examiner can normally be reached on 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Emmanuel Moise can be reached on 571-272-3865. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Shewaye Gelagay

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